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Influence of Plasma Properties on Extracted Beam in Laser Ion Source Controlled by Magnetic Field

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At Brookhaven National Laboratory (BNL), laser ion source produces various heavy ion beams provided to Relativistic Heavy Ion Collider (RHIC) and NASA Space Radiation Laboratory (NSRL)[1]. The ion species and beam current are required to be changed to meet the user's requirements. A solenoid magnet is placed to control the beam current which can control the diverging angle of the plasma. Since the property of plasma is different with target condition, the effect of the magnetic field is expected to vary. To operate the ion source reliably, we investigated the magnetic effect on different ion beams.

References

[1] T. Kanesue et al., Proceedings of IPAC2014, Dresden, Germany, pp. 1890-1892, 2014

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